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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,584	06/08/2000	Tai A. Ly	4000/10	1223

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EXAMINER

THOMPSON, ANNETTE M

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/590,584

Applicant(s)

LY ET AL.

Examiner

A. M. Thompson

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-3, 7-9, 11, 15-24, 27, 28, 31, 32 is/are allowed.
- 6) ☐ Claim(s) 4 and 5 is/are rejected.
- 7) ☐ Claim(s) 6, 10, 12-14, 25, 26, 29, 30, 33 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This application 09/590,584, has been examined. Claims 1-34 are pending.

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the Examiner on form PTO-892, they may not have been considered.
2. The use of Appendices (Appendix A and Appendix B) to reference publications is also an improper information disclosure statement. Applicants must delete use of and reference to Appendices in the specification.

Drawings

3. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: At page 1, lines 1-5, update status of referenced patent application, e.g. "now U.S. Patent xxx".

Appropriate correction is required.

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The current title, Method for Automatically Pipelining Loops, does not accurately reflect what is claimed.

Claim Objections

6. **Claims 4-6, 10, 12-14, 25, 26, 29, 30, 33 and 34** are objected to because of the following informalities: Pursuant to **claims 4, 5 and 6**, these claims depend from independent claim 1 and recite the limitation of "said wait statements". However, claim 1 does not provide proper antecedent basis for this recitation. Further, pursuant to claims 4 and 5, wait statements and Verilog @posedge/@negedge clock are different constructs and use different Verilog terminology. Pursuant to **claim 10**, at line 3, after "producer" and "consumer", insert - -operation- -. Pursuant to **claim 12**, at line 2, before "group", change "the" to - -a- -. Pursuant to **claim 13**, at line 2, before "group", change "the" to - -a- -. Pursuant to **claim 14**, before "group", change "the" to - -a- -. Pursuant to **claims 25, 26, 29, 30, 33, and 34**, wait statements and @posedge/@negedge are separate Verilog language types and are not equivalent to each other; therefore Applicants must clarify the claim language which is potentially misleading at best and simply incorrect at worst. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

Applicants regard as the invention. Pursuant to claims 4 and 5, it is well known in the art of integrated circuit design that wait statements and Verilog @posedge/@negedge statements are different and use different code terms. Applicants' specification recognizes and includes this distinction (see e.g. page 25, line 1-5). Therefore, Applicants' claim language is confusing when it states that wait statements use Verilog @positive edge or @negative edge statements, when it is well known in the art of integrated circuit design that wait statements explicitly use "Wait" as the keyword term.

Allowable Subject Matter

9. Claims 1-3, 7-9, 11, 15-24, 27, 28, 31, 32 contain allowable subject matter and are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: In a method for automatically pipelining loops, the prior art does not disclose setting the latency of a pipeline within a digital circuit representation equal to a delay value of a delayed signal assignment of a loop within the digital circuit representation. Further, the prior art does not disclose constraining a scheduling order of a second access operation of an access dependency of a loop. Additionally, the prior art does not disclose latency setting logic for setting a latency value of a pipeline equal to the delay value of a delayed signal assignment. Still further, the prior art does not disclose initiation interval setting logic for setting an initiation interval of a pipeline equal to the number of wait statements.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please reference the PTO-892 for a complete listing.

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to A.M. Thompson whose telephone number is (703) 305-7441. The Examiner can usually be reached Monday thru Friday from 8:00 a.m. to 5:00 p.m.. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Matthew S. Smith, can be reached on (703) 308-1323.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956 or the Customer Service Center whose telephone number is (703)306-3329.

13. Responses to this action should be mailed to:

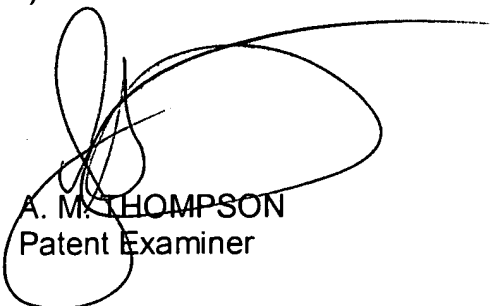
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Washington, D.C. 20231

or faxed to:

(703) 872-9318, (for **OFFICIAL** communications intended for entry)
(703)872-9319, (for Official **AFTER-FINAL** communications)

Hand-delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).



A. M. THOMPSON
Patent Examiner

28 May 2003